

children. In cases of infantile pellagra, evidence of close residence with another pellagrin is usually early noted. The milk of pellagrin mothers is not considered by the authors to be the cause or the vehicle of the cause of pellagra in infants. The period from twelve to sixteen years is relatively free from initial attacks of pellagra. After sixteen years, the incidence of pellagra rises rapidly in women, especially in colored women, among whom the death rate has been 46.7 per cent. in the year of onset during the period from sixteen to twenty years. Between the ages of twenty and fifty years the number of women pellagrins gradually decreases. The number of men attacked gradually increases during this period so that at fifty years the two sexes are about equal. The onset of pellagra in old age has been found to be somewhat more common in men. In white women over twenty years of age the death rate has been found to be 11.9 per cent., increasing progressively from 4.6 per cent. in the third decade to 47.6 per cent. in the seventh decade of life. For analogous groups of white men, colored women and colored men the death rate has been 21.2 per cent., 40.2 per cent., and 50 per cent., respectively, increasing slightly with age in all these groups. A table recording the incidence of pellagra per 10,000 population in respect to race, sex, and age gives the following computations: Incidence per 10,000 for white male population, 231; incidence per 10,000 for colored female population, 81; incidence per 10,000 for colored male population, 25. In the age period ten to fourteen years, the incidence is low in all groups. In white female population it is highest in the age period thirty to thirty-four years, namely, 535 per 10,000. In white male population it is 325 per 10,000 in the period from fifty-five to fifty-nine years. In colored female population it is 241 per 10,000 in the period from thirty to thirty-four, while in colored males it is 33 per 10,000 in the period from sixty to sixty-four years. Another table shows the proportion of initial attacks in children under twelve years of age to be increasing. In 1910 they were only 3.7 per cent. of the total recorded cases, while in 1914 they were found to be 29.7 per cent. of the total recorded cases. In the opinion of these investigators the relatively lower incidence of pellagra among the negroes of Spartanburg County is due to the fact that they are, in a large measure, segregated from white pellagrins and that the disease is not so persistently present among them because they die much more rapidly than do white pellagrins, due to greater poverty and poorer diet. The study of racial and age differences in the incidence of pellagra show that poverty and poor diet are important factors in determining the death rate among pellagrins but that they are important only in connection with close association with antecedent pellagrins if the original onset of the disease is under consideration.

Different Types of Streptococci and Their Relation to Bovine Mastitis.—MATHERS (*Jour. Infect. Dis.*, August, 1916, No. 2, xix) finds that hemolytic streptococci of human origin produce mastitis in cows, as Davis and Capps have shown, when injected directly into the milk ducts. This mastitis may be severe, leading to a caked bag and later to a chronic inflammatory condition which results in an atrophy of the mammary gland. On the other hand, virulent hemolytic streptococci may grow and multiply in the milk ducts of a cow without causing

any visible changes in the udder. The milk, however, as these observations show, contains hemolytic streptococci and an increased number of leukocytes. These infections may persist over long periods of time in the form of a chronic mastitis. *Streptococcus lacticus* of the type used in these experiments produces a very acute inflammation of the udder when cultures are injected directly into the milk ducts. This infection in my experiments was of short duration and left the gland functionally unchanged. A non-pathogenic hemolytic streptococcus of the type commonly found in normal milk may give rise to a transitory inflammation of the udder when injected directly into the milk ducts, producing a mastitis similar in every detail to that produced by non-hemolytic *Streptococcus lacticus*. The presence of pathogenic streptococci and an increased number of leukocytes in milk is indicative of a mastitis, and may be the sole indication of mastitis. The quarters of a cow's udder under experimental conditions are apparently separate as regards infection. One quarter may be infected while the others remain normal. Examination of the milk from each quarter of the udder is necessary before mastitis can be excluded in a suspected cow. In three instances of bovine mastitis, all of which were due to hemolytic streptococci with all the characteristics of the human types, no noteworthy changes in the morphology or cultural characteristics of the invading organisms were observed in frequent examinations of the milk throughout the course of the infections. The distinguishing characteristics primarily noted for each organism were still present at the last observation, and there were no modifications which might be considered as indicating a change from one type to the other. The cultural and morphological characters of *Streptococcus lacticus* and of the hemolytic streptococcus derived from normal milk did not change during the course of the udder infections which they induced.

Rocky Mountain Spotted Fever in California.—CUMMING (*Jour. Infect. Dis.*, November, 1917, p. 509) states that the results of animal inoculations definitely establish the occurrence of Rocky Mountain spotted fever in California. The finding of *Dermacentor venustus* in Ventura County and the occurrence of a case there marks that region as a new area of possible prevalence of the disease in California. Advantage should be taken of the inoculation test to establish definitely the nature of the seasonal eruptive fever which occurs in Modoc and Lassen counties.

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